Remarks

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Thus, claim 5 has been amended to raise the lower limit for the amount of Mg from 0.3 to 0.35 wt%. Claim 5 has also been amended to narrow the amount of Mn to a range of 0.03 - 0.06 wt%, as a result of which claim 6 has been cancelled.

Applicants respectfully submit that these amendments should be entered, even though they are being presented after a final rejection, since the effect of the amendments is to clearly place the application in condition for allowance, as will be discussed below.

Thus, the patentability of the presently claimed invention, after entry of the foregoing amendments, over the disclosures of the references relied upon by the Examiner in rejecting the claims, will be apparent upon consideration of the following remarks.

The rejection of claims 5-8 under 35 U.S.C. §103(a) as being unpatentable over Shibata (JP '857) is respectfully traversed.

As Applicants have previously noted, and as discussed on page 2 of the specification, the present invention relates to a specific aluminium alloy with narrow alloying elements, i.e. a "selection invention", which apparently the Examiner has totally disregarded.

That is, the present invention relates to an AlMgSi aluminium alloy where Mn is added as an alloying element within narrow limits (0.02 - 0.08 wt%, now amended to 0.03 - 0.06 wt%) in combination with low additions of Mg (0.3 - 0.5 wt%, now amended to 0.35 - 0.5 wt%) and Si (0.35- 0.6 wt%). Such narrow additions of Mn in combination with small and narrow additions of Mg and Si have a positive effect on the extrudability of the AlMgSi alloy. In addition to promoting the transformation of the AlFeSi intermetallic phases, AlMnFeSi dispersoid particles are formed during homogenization. These particles act as nucleation sites for Mg_2Si particles during cooling after homogenization. In a high quality billet the Mg_2Si particles formed during cooling after homogenization should easily dissolve during the preheating and the extrusion operation before the material reaches the die opening. With a larger number of dispersoid particles, a higher number of Mg_2Si particles are formed, resulting in a reduced size of each particle. Since the rate of dissolution of an Mg_2Si particle is proportional to its size, a high quality billet should contain a certain amount of AlMnFeSi dispersoid particles, which promote

the formation of a relatively large number of small Mg_2Si particles that dissolve easily during the preheating and extrusion operation.

JP '857 is totally silent about the above-mentioned effects related to the transformation of the AlFeSi intermetallic phases and formation of AlMnFeSi dispersoid particles during homogenization. Quite to the contrary, JP '857 relates to an aluminium composite alloy with up to 30 vol% of particles such as carbide or oxide and with alloying elements of Si, Mg and Mn added in amounts far beyond what is claimed for the present invention. Thus, JP '857 suggests up to 10 wt% Mg which is **20 times more** than the upper limit in the present invention. JP '857 further proposes up to 11.6 wt% Si which also is about **20 times more** than the present invention (up to 0.6 wt%) and up to 10 wt% Mn which is more than **100 times above** that according to the present invention.

Applicants respectfully take the position that, even if there is an overlap in ranges for the components as argued by the Examiner, the ranges for Mg, Si and Mn in the JP '857 reference are so broad as to encompass a very large number of possible distinct compositions that present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus (MPEP 2144.05, Section I). **As a result, in comparing the presently claimed invention with this reference, the Examiner should use the approach referred to in MPEP 2144.08, indicating that the fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness.** As also referred to in this section of the Manual, establishing such a case of obviousness involves the three-step process described therein. Applicants take the position that the Examiner has not conducted such an obviousness analysis in comparing the presently claimed invention with the JP '857 reference, and for this reason alone, the rejection based on this reference should be withdrawn.

The rejection of claims 5-8 under 35 U.S.C. §103(a) as being unpatentable over Parson et al. (US '359) in view of Ohyama et al. (US '090) is respectfully traversed.

US '359 corresponds to WO 98/42884 which is discussed in the present application on pages 1, 2, 5 and 8. The major difference between the alloy as defined in claim 5 of the present application and US '359 is the content of Mg, which is 0.35 - 0.5 wt% according to the present invention and 0.2 - 0.34 wt% according to US '359. In addition, the present invention specifies a more narrow range of Mn (0.03 - 0.06 wt%) compared to up to 0.15 wt% in US '359.

The Mn level of up to 0.15 wt% is according to US '359 applied to achieve a high degree of transformation from ß-AlFeSi to α-AlFeSi. According to the present invention the inventors found that addition of Mn in excess of this level, combined with the claimed Mg range, in addition gives a benefit on the productivity at the extrusion press. However, if more than 0.06wt.% Mn is added to the alloys there is a negative effect on the quench sensitivity of the extruded profile. Thus, it is preferable to have a Mn level that lies between 0.03 wt.% and 0.06 wt.% for these alloys. This is not disclosed or suggested in US '359.

As Applicants have already discussed, in their previous response, U.S.'090 describes an aluminium alloy for wrought material where the alloy contains wide ranges of Mg and Si (both up to 5%). The alloy further contains a wide range of Mn between 0.01-1.2, and there is no disclosure or suggestion in this reference of the importance of controlling the Mn level within a narrow range, i.e., between 0.03 - 0.06 wt% to obtain the advantageous AlFeSi intermetallic phases and AlMnFeSi dispersoid particles as described above.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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